REMARKS

Reconsideration of the subject application in view of the preceding amendments and the following remarks is respectfully requested. Claims 1 and 3-8 are pending in this application. Claims 1, 4, and 7 have been amended herein and Claim 2 has been canceled without prejudice. Amendments have also been made to the Specification to correct informalities. No new matter has been introduced by this amendment.

Rejections Under 35 U.S.C. § 102

Claims 1-7 were rejected under 35 U.S.C. § 102(b) over U.S. Patent No. 6,116,610 to Goldswain et al. ("Goldswain"). The rejection is respectfully traversed for at least the following reasons.

Goldswain describes a spring energized plastic seal (24') having a first part (40) and a second part (42). The second part (42) has a pair of sealing elements (28) that are forced apart by a helical spring element (30) to form a seal between components (12 and 14) which can move axially relative to one another. The first and second parts (40, 42) abut each other along conical surfaces (44, 46) so that an axial load on the seal (24') will cause a radial load on the first part (40) causing nose (48) to be deflected into engagement with carrier ring (12) to close a gap between carrier ring (12) and retainer ring (14). (Col. 4, Lines 1-6). First part (40) is designed so that radial deflection of the nose (48) will be at a slightly greater rate than deflection of the carrier ring (12) under pressure, so that engagement of the first part (40) with the carrier ring (12) will be maintained, without excessive loading. (Col. 4, Lines 6-11).

In contrast to Goldswain, amended Claim 1 recites, a secondary seal element including, *inter alia*, a base body having a base portion and a seal portion, and an annular disc element accommodated in said base portion wherein the annular disc element is formed of a carbon material, and wherein the annular disc element is disposed in a recess in an end face of the base portion and projects axially beyond the end face and further in such manner so that a pressurized fluid can exert a radially inward force on at least a portion of a radially outermost surface of the annular disc element when the secondary seal element is in a loaded state.

It is respectfully submitted that Goldswain, does not teach, suggest or disclose an annular disc element disposed in a recess in an end face of the base portion and that projects axially beyond the end face and further in such manner so that a pressurized fluid can exert a radially inward force on at least a portion of a radially outermost surface of the annular disc element when the secondary seal element is in a loaded sate, as recited in amended Claim 1. Instead, the annular disc element (first part 40) of Goldswain has a radially outermost face that directly abuts retainer ring (14), as shown in Fig. 2. Fluid cannot therefore act on this radially outermost surface to exert a radially inward force on first part (40) when the seal (24') is loaded. Indeed, the structure described in Goldswain has no need of a fluid acting on the radially outermost surface to exert a radially inward force on first part (40) when the seal (24') is loaded because sufficient force is exerted by second part (42) in the radial direction. Moreover, even if a fluid could act on the radially outermost surface of first part (40) when the seal (24') is loaded, the force would largely be cancelled out by normal forces from the radially upward face of wall (38). Rather the radially inward force on first part (40) comes from the axial force of the first part (40) acting through an inclined contact (44, 46) when seal (24') is loaded.

This structural distinction between Goldswain and the annular disc element recited in Claim 1 leads to functional differences as well. The annular disc recited in Claim 1 provides the following advantages, as stated in U.S. Pat. Application No. 2006/0103074, paragraph [0017]:

> "Thus, as the pressure of the medium increases, the ring seal element 25 is pressed into ever firmer sealing engagement with the neighboring surface of the sleeve 18 in order to seal the radial gap s [*sic*] between the seal ring 3 and the sleeve 18. The seal portion 14 is thereby practically freed of pressure. By contrast, for smaller pressures of the medium, the sealing is effected primarily by the seal portion 14 due to the engagement between the radially inner sealing surface 23 thereof and the surface of the sleeve 18 since here, the contact pressure on the ring seal element 25 is not sufficient to obtain an adequate sealing effect."

There is thus a sequential transfer of the sealing function from the seal portion of the base body to the annular disc element. Benefits of the secondary sealing element recited in Claim 1 include reduction of "hang-up" effects at low pressures while still maintaining freedom of movement at high pressures, especially given the good tribological properties of the carbon material of the disc element. (*see* Paragraph [0017] of U.S. Pat. Application No. 2006/0103074).

It is respectfully submitted that the structures described by Goldswain, in contrast, are arranged so that an axial force from the second part (42) will always produce a radial component of force on first part (40) thereby causing the end of tip (48) to be bent radially against the component that is to be sealed (12). According to Goldswain, "engagement of the first part 40 with the carrier ring 12 will be maintained, without excessive loading" (Col. 4, Lines 9-11). It is respectfully submitted that a consequence of the configuration in Goldswain is that in practice both parts (40, 42) of the known secondary seal element exert a sealing function simultaneously thereby causing the freedom of movement of the component requiring sealing to be correspondingly restricted.

Finally, the structural differences between the secondary sealing element recited in Claim 1 and the seal (24') in Goldswain can be demonstrated in light of difficulty of assembly. It is respectfully submitted that the first and second parts (40,42) described in Goldswain each need to be separate pieces from one another, making the assembly process unnecessarily difficult when mounting the parts (40,42) on the device requiring sealing (12, 14). In contrast, the secondary seal element in accordance with Claim 1 can be prefabricated as a single unit with the annular disc element attached, facilitating the assembly process considerably over the seal (24') of Goldswain.

For the foregoing reasons, it is therefore respectfully submitted that Goldswain does not teach, suggest, or disclose each and every element recited in Claim 1, as presently amended. Since Goldswain does not teach, suggest, or disclose each and every element of amended Claim 1, it is respectfully submitted that Goldswain does not anticipate Claim 1, as presently amended. Claims 3-6 depend from amended Claim 1 and thus include all the elements of Claim 1, as presently amended. Therefore, it is respectfully submitted that Goldswain does not anticipate Claims 3-6. For the foregoing reasons, withdrawal of the rejection under 35 U.S.C. § 102 is respectfully requested.

Claim 7, as presently amended, recites a mechanical face seal device having, *inter alia*, the same secondary sealing element recited in amended Claim 1, including the same annular disc element. It has been established with respect to amended Claim 1 above that Goldswain does not teach, suggest or disclose the annular disc element also recited in Claim 7, as presently amended. Therefore, it is respectfully submitted that Goldswain does not anticipate Claim 7, as presently

amended. Withdrawal of the rejection under 35 U.S.C. § 102(b) is therefore respectfully requested.

Rejections Under 35 U.S.C. § 103

Claim 1 was rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 5,921,556 to Bauman et al. ("Bauman"). In particular, it was alleged on Page 4 of the Office Action that Bauman discloses the claimed invention except for the annular disc element being of a carbon material. For at least the following reasons, the rejection is respectfully traversed.

Bauman describes a seal (12) for gas springs. The seal (12) is generally annular and has a bore defined by an inner surface (64). A ring insert (94) is arranged inside the bore with an inner diameter that can be sized between the sizes of the diameters of lobes (e.g. 84) and recesses (e.g. 88) in the inner surface (64), as suggested by Fig. 4. A portion of the axial end surface (72) is cut away exposing a portion of an axially facing side of insert (94). In this configuration, extrusion of surface (72) into other components of the gas spring is reduced. (Col. 9, Lines 41-44). This configuration also allows insert (94) to wipe oil from the rod (32) of the gas spring. (Col. 10, Lines 24-30).

In contrast, amended Claim 1 recites, a secondary seal element including, *inter alia*, a base body having a base portion and a seal portion, and an annular disc element accommodated in said base portion wherein the annular disc element is formed of a carbon material, and wherein the annular disc element is disposed in a recess in an end face of the base portion and projects axially beyond the end face and further in such manner so that a pressurized fluid can exert a radially inward force on at least a portion of a radially outermost surface of the annular disc element when the secondary seal element is in a loaded state.

Bauman does not teach, suggest, or disclose the annular disc element recited in Claim 1, as presently amended. In particular, Bauman, does not teach, suggest or disclose an annular disc element disposed in a recess in an end face of the base portion and that projects axially beyond the end face and further in such manner so that a pressurized fluid can exert a radially inward force on at least a portion of a radially outermost surface of the annular disc element when the secondary seal element is in a loaded sate, as recited in amended Claim 1. Instead, the ring insert (94) does not project axially beyond the end face (72), but is axially inset with respect to end face (72). Moreover, ring insert (94) does not have a radially outermost surface that can be acted upon by a pressurized fluid to exert a radially inward force on insert (94)—rather the radially outermost surface of insert (94) is abutted against the material of the seal (12) and thus fluid cannot act thereon in a radially inward direction.

For the foregoing reasons, it is respectfully submitted that in addition to failing to teach, suggest, or disclose the carbon material of the annular disc element, Bauman also fails to teach, suggest, or disclose other elements recited in Claim 1, as amended. It is therefore respectfully submitted that since whole elements of amended Claim 1, besides the carbon material for the annular disc element, are missing in Bauman, there is no *prima facie* case of obviousness with respect to amended Claim 1 based on Bauman. Withdrawal of the rejection under 35 U.S.C. § 103(a) is therefore respectfully requested.

Claim 8 was rejected under 35 U.S.C. § 103(a) over Goldswain. In particular, on Page 5 of the Office Action, it was alleged that Goldswain discloses the claimed invention except for the sleeve formed of tungsten carbide. For at least the following reasons, the rejection is respectfully traversed.

It has been established above that Goldswain does not teach, suggest, or disclose each and every element recited in Claims 1 and 7, as presently amended. In particular, Goldswain fails to teach, suggest, or disclose an annular disc element disposed in a recess in an end face of the base portion and that projects axially beyond the end face and further in such manner so that a pressurized fluid can exert a radially inward force on at least a portion of a radially outermost surface of the annular disc element when the secondary seal element is in a loaded sate, as recited in amended Claims 1 and 7. Claim 8 depends from amended Claim 7 and thus includes all of the elements recited in Claim 7, as presently amended. Therefore, in addition to failing to teach, suggest, or disclose the tungsten carbide material of the sleeve, there are whole other elements of Claim 8 that Goldswain fails to teach, suggest, or disclose. As such, it is respectfully submitted that there is no *prima facie* case of obviousness with respect to Claim 8 based on Goldswain. Therefore, withdrawal of the rejection under 35 U.S.C. § 103(a) is respectfully requested.

CONCLUSION

It is respectfully submitted that none of the prior art of record, alone or in combination, teaches, suggests or discloses the invention as presently claimed. Based upon the foregoing, favorable consideration of Claims 1 and 3-8 is respectfully requested. If it is believed that an interview would advance prosecution, the Examiner is invited to call Applicant's representative at the number below.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 04-1105, under Order No. 63360(51994).

Respectfully submitted,

Date: April 10, 2007

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